

**TOWARD A BALANCED SCORECARD HEALTHCARE
ORGANIZATION: A CASE STUDY ON ASSESSING
PERFORMANCE MEASUREMENT PROGRESS
AT GOVERNMENT HOSPITAL**

JULIANA HII LI LI

UNIVERSITI UTARA MALAYSIA

TOWARD A BALANCED SCORECARD HEALTHCARE ORGANIZATION:
A CASE STUDY ON ASSESSING PERFORMANCE MEASUREMENT
PROGRESS AT GOVERNMENT HOSPITAL

A thesis submitted to the Graduate School in partial
fulfillment of the requirements for the degree
Master of Science (Management),
Universiti Utara Malaysia

By

Juliana Hii Li Li

© Juliana Hii Li Li, 2004. All rights reserved.



PERAKUAN KERJA KERTAS PROJEK
(Certification of Project Paper)

Saya, yang bertandatangan, memperakukan bahawa
(I, the undersigned, certify that)

JULIANA HII LI LI

calon untuk ijazah _____
(candidate for the degree of) Master Of Science Management (MSc. Mgmt)

telah mengemukakan kertas projek yang bertajuk
(has presented his/her project paper of the following title)

TOWARD A BALANCED SCORECARD HEALTHCARE ORGANIZATION:

A CASE STUDY ON ASSESSING PERFORMANCE MEASUREMENT PROGRESS

AT GOVERNMENT HOSPITAL

seperti yang tercatat di muka surat tajuk dan kulit kertas projek
(as it appears on the title page and front cover of project paper)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan.
(that the project paper acceptable in form and content and that a satisfactory knowledge of the field is covered by the project paper).

Nama Penyelia : Prof. Dr. Juhary Haji Ali
(Name of Supervisor)

Tandatangan : 
(Signature)

Tarikh : 10 Jun 2004
(Date)

GRADUATE SCHOOL
UNIVERSITI UTARA MALAYSIA

PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a postgraduate degree from the Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor(s) or, in their absence, by the Dean of the Graduate School. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of material in this thesis in whole or in part should be addressed to:

Dean of Graduate School
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman

ABSTRAK

Kajian kes ini meneliti dan menghuraikan pencapaian dalam sistem pengukuran prestasi di sebuah hospital kerajaan. Secara khusus, objektif kajian adalah untuk mendapatkan pemahaman yang lebih baik mengenai sistem pengukuran semasa dan dengan bantuan pendekatan strategik *Balanced Scorecard* (BSC) menolong mengenalpasti peluang peningkatan sendiri sistem tersebut. Selain itu, kajian ini juga cuba untuk menjawab persoalan kenapa pihak pengurusan hospital terus mengekalkan amalan sistem semasa tersebut dan mendedahkan tahap adaptasi BSC di peringkat organisasi, sekiranya ada. Untuk tujuan kajian ini, 50 set soalan yang mengandungi 50 item ukuran dengan skala *Likert* 5 mata telah diedarkan kepada para responden yang telah dikenalpasti sebagai kaedah utama pengumpulan data kuantitatif, sementara 7 staf pengurusan atasan sanggup ditemubual untuk data kualitatif. Daripada jumlah ini, hanya 30 set soalan lengkap yang digunakan dan dianalisis dengan program statistik deskriptif mudah SPSS, sementara data kualitatif diperolehi daripada mereka yang ditemubual. Didapati bahawa amalan pengukuran prestasi semasa hospital berada dalam lingkungan prestasi *band* pertengahan dengan skor keseluruhan sebanyak 223. Ini menunjukkan tanda positif perkembangan dan permulaan yang baik dalam penstrukturan semula pendekatan hospital kepada sistem pengukurannya. Namun, keputusan juga menunjukkan bahawa hospital masih lemah dalam ukuran yang berkaitan dengan pekerja dan ukuran tertentu mengenai pembekal, dan pada masa yang sama mempunyai kekuatan ukuran dalam kewangan, operasi dan produk/perkhidmatan berkualiti. Kategori ukuran yang digunakan oleh hospital agak seimbang, iaitu kewangan, operasi/aktiviti, kualiti, *personel* dan keselamatan sementara produktiviti dan efisiensi diberi penekanan dalam pengukuran tersebut. Keputusan temubual juga menunjukkan bahawa pihak pengurusan tidak bercadang untuk membuat perubahan kepada amalan semasanya buat sementara waktu disebabkan oleh faktor seperti faedah daripada amalan, masa dan usaha dan pengaruh komitmen pihak pengurusan. Juga secara rasminya, didapati tiada tahap adaptasi BSC di hospital tetapi terdapat persamaan elemen BSC dipraktikkan di organisasi tersebut. Justeru itu, kajian ini mencadangkan peningkatan pada kelemahan tempat tertentu seperti maklumbalas, kekerapan pemantauan dan adaptasi pendekatan sebenar BSC ke arah mencapai organisasi yang seimbang.

ABSTRACT

This case study examined and described the progress of the existing performance measurement at a government hospital. Specifically the objectives of the study were to gain a better understanding of the current measurement system and with the aid of strategic balanced scorecard (BSC) approach, help in identifying possible self-improvement to the system. Beside that, the study also tried to answer the question on why the hospital management continued with the practice of the current system and revealed the level of BSC adoption at the organizational level if any. For this study 50 sets of questionnaire consisted of 50 items measured with 5 point Likert scale was distributed to the identified respondents as the main method of collecting quantitative data, while 7 top management staffs were willing to be interviewed for the qualitative data. Out of the figure, only 30 sets of completed questionnaire were used and analyzed with the SPSS simple descriptive statistic program, while qualitative data came from the interviewees. It was found that the hospital current practice of performance measurement is well within a middle band performance with overall score of about 223. This showed a positive note of development and a good beginning in reengineering hospital approach to its measurement system. However, the result indicated that hospital was still weak in employee related measures and certain suppliers' measures and at the same time having strength in finance, operation and product/service quality measures. Category of measures used by the hospital was quite balanced, namely finance, operation/activity, quality, personnel and safety, while productivity and efficiency are generally emphasized in these measurements. Interview result also showed that management had no plan to make changes to its current practice for time being due to factors such as benefit of practice, time and effort and influence of management commitment. Also, officially there was no level of balanced scorecard (BSC) adoption at the hospital but there were similarity of BSC elements being practiced at the organization. Hence, this study proposed improvement in certain area of weakness like feedback, monitoring of frequencies and adoption of the real BSC approach towards a more balanced organization.

ACKNOWLEDGEMENT

It is my pleasure to extend my sincere thanks to my supervisor, Professor Dr. Juhary Ali for his advice, guidance, patient and encouragement throughout this project. In a special way, I would like to extend my gratitude and thanks to Dr Abdul Rahim, Director of Hospital Sibul for allowing my research activity to be carried out at the hospital. I am also grateful to Dr Mohd Asri, Deputy Director of Sarawak General Hospital for his approval on the pilot study conducted for the survey questionnaire. In addition, I would like to express my appreciation to the staffs and respondents at Hospital Sibul, especially Mr Paul Chako, Dr Wong See Yin, Dr Wong See Chang, and Staff Nurse Rita Wong for their cooperation and endurance in assisting the success of this study. Lastly, I would like to thank my parent and all my friends for their encouragement and support throughout the process of this study.

JULIANA HII LI LI

9 JUNE 2004

TABLE OF CONTENTS

	Page
PERMISSION TO USE	i
ABSTRAK	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER 1: INTRODUCTION	1
1.1 Background of the study	1
1.2 Problem statement	4
1.3 Objective of the study	6
1.3.1 Sub-objective of the study	7
1.4 Significance of the study	7
1.5 Delimitation and limitation	8
1.6 Organization of the report	10
CHAPTER 2: LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Definition of Performance Measurement System	11
2.3 The trend, issue and challenge in assessing Performance Measurement	13

2.4	Performance Measurement in healthcare organization	16
2.5	Balanced Scorecard Framework	21
2.5.1	The Financial Perspective	23
2.5.2	The Customer Perspective	24
2.5.3	The Internal Business Process Perspective	25
2.5.4	The Learning and Growth Perspective	26
2.5.5	How the BSC Framework function	27
2.6	Previous research	28
 CHAPTER 3: RESEARCH METHODOLOGY		36
3.1	Introduction	36
3.2	Case study approach	36
3.3	Case study design	38
3.4	The selected case	41
3.5	Research instrument	42
3.5.1	Questionnaire	42
3.5.2	Interview question	44
3.6	Data collection	44
3.7	Data analysis	45
3.8	Definition of concept	47

CHAPTER 4: RESULTS AND DISCUSSION	49
4.1 Introduction	49
4.2 Case study background and characteristics	49
4.3 Selected Department	55
4.3.1 Medical Department	55
4.3.2 Central Sterile Supply Department (CSSD)	58
4.3.3 Pharmacy Department	59
4.4 Hospital current measurement system	61
4.4.1 Current practices	61
4.4.2 Category of performance measures	73
4.5 The development of current system usage	82
4.6 Level of Balanced Scorecard (BSC) Adoption	86
4.7 Discussion	90
 CHAPTER 5: CONCLUSION AND RECOMMENDATION	 96
5.1 Introduction	96
5.2 Conclusion	
5.3 Recommendations	98
5.3.1 Recommendations for practice	98
5.3.2 Recommendations for further research	100
 REFERENCE	 103

APPENDICES

Appendix A

Appendix B

Appendix C

Appendix D

LIST OF TABLES

	Page
Table 4.1: General categorization of services provided by Hospital Sibuh	52
Table 4.2: Types of services provided according to units/disciplines of Hospital Sibuh	53
Table 4.3: Characteristics of Hospital Sibuh.	56
Table 4.4a&b: Descriptive statistics of hospital performance measurement system assessment score	62-63
Table 4.5: Average percent of respondents' view on the number of monthly performance measures studied by Hospital Director	69
Table 4.6: Category of measures utilized by the selected departments	75-77
Table 4.7: An example of Hospital Sibuh Balanced Scorecard	90

LIST OF FIGURES

	Page
Figure 2.1: BSC Framework that translates a strategy into operational terms	23
Figure 4.1: Distributions of respondents' view on tight linkage between metrics in hospital database and its key success factors	64
Figure 4.2: Percentage of respondents who think the development of the hospital database was planned rather than evolved over time	68
Figure 4.3: Respondents' view on consistency and well balance of the hospital performance measures	71

CHAPTER 1

INTRODUCTION

1.1 Background Of The Study

Performance measurement system plays an important key role in ensuring the success of today's modern business organization. Although activities related to measurement system can be tedious and boring, smart and forward looking senior executives who are involved in measuring the performances know very well of their impact on the organizations. Thus, seeking improvement and competitive advantage for the organization often resulted in the need for the management to rethink the approach use in the existing performance measurement systems, in the event that these systems fail to accomplish their tasks in the context of rapid changing business environment. This is because by nature of definition from Neely (1998), performance measurements focus on efficiency and effectiveness in providing the senior executives with the means to control, identify opportunities for continuous improvement, self-assessment and to enhance the management of these activities (Birch, 2000).

However, without efficiency and effectiveness, not all the tasks mentioned can be fully and successfully accomplished. Keeping these two vital features in the performance measurement systems require the management to evaluate and update their measures by selecting the appropriate measures and eliminating the inappropriate ones, while making sure that the measures sufficiently represent the critical perspectives from

REFERENCE

- AB Suleiman. (1996). "Health in the 21st Century in Malaysia: Implication of Vision 2020." *Issues And Challenges Of Public Health In The 21st Century*. Edited by Khairuddin Yusof; Low, Wah-Yun; Siti Norazah Zulkifli and Wong, Yut-Lin. Social Obstetrics and Gynaecology, Faculty Medicine, University Malaya. University Malaya Press, Kuala Lumpur. pp: 181-189.
- Amaratunga, D., Baldry, D. & Sarshar, M. (2001). "Process improvement through performance measurement: the balanced scorecard methodology." *Work Study, Volume 50(5)*. MCB University Press. pp: 179-189
- "Balanced Scorecard In Healthcare." (2000). Retrieved December 20, 2002 from <http://www.fonendo.com/noticias/41/2000/12/4.shtml>.
- Baumgartner, T. A. & Strong, C. H. (1994). *Conducting And Reading Research In Health And Human Performance*. Brown & Benchmark Publishers, Dubuque, USA.
- Bell, J. (1993). *Complete Your Research Project Successfully*. First Edition. New Delhi, India. UBS Publisher's Distributors Ltd.
- Birch, C. (2000). *Future Success: A balance approach to measuring and improving success in your organization*. Prentice Hall, NSW, Australia.
- Bititci, U. S & Trevor Turner, C. B. (2000). "Dynamics of performance measurement systems." *International Journal of Operations & Production Management, Volume 20(6)*. MCB University Press. pp: 692-704
- Brown, M. G. (1996). *Keeping Score: Using the right metrics to drive world-class performance*. Quality Resources, New York, USA.
- Bourne, M., Mills, J., Wilcox, M., Neely, A. & Platts, K. (2000). "Designing, Implementing and Updating Performance Measurement Systems." *International Journal of Operations & Production Management, Volume 20(7)*. MCB University Press. pp: 754-771.
- Bourne, M., Neely, A., Platts, K. & Mills, J. (2002). "The success and failure of performance measurement initiatives: perception of participating managers." *International Journal of Operations & Production Management, Volume 22(11)*. MCB University Press. pp: 1288-1310.
- Buku Orientasi Untuk Anggota-Anggota Hospital Sibul* .(2001) Edisi Pengenalan. Hospital Sibul, 02 Mei 2001.

- Butler, M. (n.d.) "CPMR Discussion Paper 14: Performance measurement in the health sector." Retrieved December 20, 2002 from <http://www.irigov.ie/cpmr/papers/paper14.doc>.
- Castaneda-Mendez, K., Mangan, K., & Lavery, A.M. (1998). "The Role And Application Of The Balance Scorecard In Healthcare Quality Management." Retrieved December 10, 2002 from <http://www.nahq.org/journal/ce/063/063.htm>.
- Chee Heng Leng. (1990). *Health And Healthcare In Malaysia: Present trends and implications for the future*. Institut Pengajian Tinggi Universiti Malaya, Kuala Lumpur.
- Chan, Yee-Chin L. & Ho, Shih-Jen K. (2000). "The use of Balanced Scorecard in Canadian Hospitals." Retrieved November 18, 2002, from <http://aaahq.org/NERegion/2000/q17.pdf>.
- Chang R. Y. & Young, P. D. (1995). *Measuring Organizational improvement Impact: A practical guide to successfully linking organizational improvement measures*. Jossey-Bass Pfeiffer. California, USA.
- Chang, L., Lin, S.W. & Northcott, D.N. (2002). The NHS Performance Assessment Framework: A "balanced scorecard" approach? *Journal of Management in Medicine, Volume 16*(5). pp: 345-358. Retrieved 4 January 2003 from <http://www.Emerald Fulltext Database>.
- Curtright, J. W., Stolp-Smith, S. C., & Edell, E. S. (2000). "Strategic Performance Management: Development of a performance measurement system at the Mayo Clinic." *Journal Of Healthcare Management, Volume 45*(1), Jan/Feb 2000. pp: 58-68.
- CSSD Yearly Report, 2001. Hospital Sibiu.
- Davis, T. R. V. (1996). "Developing an employee balanced scorecard: linking frontline performance to corporate objectives." *Management Decision, Volume 34*(4).pp: 14-18. MCB University Press.
- Eccles, R. G. (1991). "The performance measurement manifesto." *Performance Measurement And Evaluation*. Edited by Holloway, J., Lewis, J., & Mallory, G. (1995). Sage Publications, London. pp: 5-14.
- Eisenhart, K. M. (1989). "Building theories from case studies research." *Academy of Management Review, Volume 14*(4). pp: 532-550. Retrieved January 15, 2003 from EBSCOhost Database.

- Ellingson, D. A. & Wambsganss, J. R. (2001). "Modifying the approach to planning and evaluation in governmental entities: A "balanced scorecard" approach." *Journal of Public Budgeting Accounting & Financial Management*, Volume 13(1), Spring 2001. Retrieved on 20 December 2002 from EBSCOhost Database
- Fitzgerald, L., Johnston, R., Brignall, S., Silvestro, R., & Voss, C. (1993). *Performance Measurement In Service Businesses*. CIMA, London.
- Fornell, C. (1992). "A national Customer Satisfaction Barometer: the Swedish experience." *Performance Measurement And Evaluation*. Edited by Holloway, J., Lewis, J., & Mallory, G. (1995). Sage Publications, London. pp: 95-123.
- Frigo, M. L. & Krumwiede, K. R. (2000). "The balanced scorecard." *Strategic Finance*, Volume 81(7), Jan 2000. Montvale. pp: 50-54.
- Gautreau, A. & Kleiner, B. H. (2001). "Recent Trends In Performance Measurement Systems-The Balance Scorecard Approach." *Management Research News*, Volume 24, Number 3/4, 2001. Barmarick. pp: 153-156.
- Hart, Chris. (1998). *Doing Literature Review*. Sage Publications, London.
- Hepworth, P. (1998). "Weighing it up- a literature review for the balanced scorecard." *Journal of Management Development*, Volume 17(8). MCB University Press. pp: 559-563.
- Howitt, D. & Cramer, D. (2001). *A Guide To Computing Statistics With SPSS™ Release 10 For Windows*. Prentice Hall, England.
- http://www.health.state.ri.us/chic/performance/quality/quality19_technical.pdf. "Data quality assessment." Retrieved on 26 February 2003.
- Inamdar, N., Kaplan, R. S., Bower, M. & Reynolds, K. (2002). "Applying the balanced scorecard in healthcare provider organizations." *Journal of Healthcare Management*, Volume 47(3). Chicago, USA. pp: 179-196.
- Ittner, Christopher D. & Larcker, David F. (2003). "Coming up short on non-financial Performance Measurement." *Harvard Business Review*, Volume 81(11), Nov 2003. Retrieved on November 2003 from Business Source Premier Database.
- Kaplan, R. S. & Norton, D. P. (1996). *The Balanced Scorecard: Translating Strategy Into Action*. Harvard Business School Press. Boston, Massachusetts.
- Kaplan, R. S. & Norton, D. P. (2001). *The Strategy-Focused Organization*. Harvard Business School Press. Boston, Massachusetts.

- Kershaw, R. & Kershaw, S. (2001). "Developing a BSC to implement strategy at St. Elsewhere Hospital." *Management Accounting Quarterly, Winter 2001*. Retrieved 26 February 2003 from <http://www.mamag.com/winter01/w01kershaw.htm>
- Kuo, C., Dunn, K. D. & Randhawa, S. U. (1999). "A case study assessment of performance measurement in distribution centers." *Industrial Management & Data Systems, Volume 99(2)*. pp: 54-63. MCB University Press.
- Krajewski, Lee J. & Ritzman, Larry P. (2002). 6th International Edition. *Operation Management: Strategy and analysis*. Prentice-Hall International. Inc. United States of America.
- Leahy, T. (2000). "Tailoring the Balanced Scorecard." *Business Finance, August 2000*. pp: 53. Retrieved 24 December 2002 from <http://www.businessfinancemag.com/archives/Static/wcd00002/wcd00228.htm>
- Lok Lee Lee. (2002). "Malaysia Striving Towards Excellence Healthcare Services." Retrieved 10 December, 2002 from http://dominoapp.npc.org.my/Archive_DB.nsf/4c42a153ace02464482569990027490f/3656e76c6bef39d048256c2100264d95?OpenDocument
- Malaysian Medical Council Annual Report*. Year 1992 – 1994.
- McAdams, R. & Saulters, R. (2000). "Quality measurement frameworks in the public sector." *Total Quality Management, Volume 11(4-6), July 2000*. Retrieved 26 February 2003 from Academic Search Elite Database.
- McCunn, Paul (1998). "The Balance Scorecard.....the eleventh commandment." *Management Accounting* December 1998 pg: 34-36
- Meliones, J. (2000). "Saving Money, Saving Lives." *Harvard Business Review, Nov/Dec 2000, Volume 78 (6)*. pp: 57-65. Retrieved 5 March 2003 from EBSCOhost Database.
- Merriam, S. B. (1988). *Case Study Research in Education: A Qualitative Approach*. San Francisco, USA. Jossey-Bass Publisher.
- Mokhtar Abdullah & Nooreha Husain (2001). "Malaysian Customer Satisfaction Index For The Service Sector For The Year 2000: Description And Findings." *Productivity Measurement in the Service Sector*. Asian Productivity Organization, Tokyo, Japan. Retrieved 21 February, 2003 from <http://www.apo-tokyo.org/00e-books/01.ProdMeasure/08.husain.prod.meas.pdf>

- Mulyadi. (2001). *Balanced Scorecard: Alat Manajemen Kontemporer Untuk Pelipatganda Kinerja Keuangan Perusahaan*. Jakarta, Indonesia. Salemba Empat.
- Neely, A. (1998). *Measuring Business Performance*. Economist Books. London.
- Neely, A. (1999). "The performance measurement revolution: why now and what next?" *International Journal of Operations & Production Management, Volume 19*(2). MCB University Press. pp: 205-228.
- Neely, A., Mills, J., Platts, K., Richards, H., Gregory, M., Bourne, M. & Kennerly, M. (2000). "Performance measurement system design: developing and testing a process-based approach." *International Journal of Operations & Productions Management, Volume 20*(10). MCB University Press. pp: 1119-1145.
- New Strait Times*. (1997, June 20). "Health Ministry Investigating Poor Performance Claim."
- Noe, R.A., Hollenbeck, J. R., Gerhart, B. & Wright, P. M. (2000). 3rd Edition. *Human Resource Management : Gaining a competitive advantage*. Boston, USA. The McGraw-Hill Companies, Inc.
- "Review of System." (n.d) Retrieved 21 January 2003 from <http://www.jcaho.org/accredited+organizations/hospitals/oryx/review+of+systems.-htm>
- Sinclair, D. & Zairi, M. (1995). "Effective process management through performance measurement." *Business Process Re-engineering and Management Journal, Volume 19*(1). pp: 75-88.
- Stewart, L. J. & Lokamy III, A. (2001). "Improving competitiveness through performance measurement system." *Healthcare Financial Management, Volume 55*(12), December 2001. pp: 46-50
- Tsang, Albert H.C., Jardine, Andrew K.S. & Kolodny, H. (1999). "Measuring maintenance performance: a holistic approach." *International Journal of Operation & Production Management, Volume 19* (7). MCB University Press. pp: 691-715.
- Tellis, W. (1997). "Application of a Case Study Methodology." *The Qualitative Report, Volume 3*(3), September 1997. Retrieved January 15, 2003 from <http://www.nova.edu/ssw/QR/QR3-3/tellis2.html>
- The Sun*. (1997, June 20). "Probe On Hospital Services." p.7.

- Van Schalkwyk, J. C., *Deloitte & Touche*. (1998). "Total Quality Management and the performance measurement barrier." *The TQM Magazine, Volume 10(2)*. MCB University Press. pp: 124-131.
- Walker, K. (1996). "Efficiency and Effectiveness Reviews in Health Care Organization." *Journal of Cost Management, Spring 1996*. pp: 80-86.
- Whole Hospital Policies, 2001*. Hospital Sibü.
- Yin, R. K. (1984). *Case Study Research: Design and Method*. Beverly Hills, California. Sage Publication, Inc.
- Yin, R. K. (1993). *Applications Of Case Study Research*. Newbury Park, California. Sage Publication, Inc.
- Zucker, D. M. (2001). "Using case study methodology in nursing research." *The Qualitative Report, Volume 6(2), June 2001*. Retrieved December 5, 2002 from <http://www.nova.edu/ssw/QR/QR6-2/zucker.html>.